STIC Search Report
EIC 1700

STIC Database Tracking Number: 148185

TO: John Goodrow
Location: REM 10A45
Art Unit : 1756
April 1, 2005

Case Serial Number: 10/657484

From: Les Henderson
Location: EIC 1700
REM 4B28 / 4A30
Phone: 571-272-2538

Leslie.henderson@uspto.gov

Search Notes

There are no hits for the calcium diazo dye you submitted (L8). The compound is in the registry file (L7), but not even the application shows up yet in STN. I did find other salts and isomers, which are included.

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=> d his

     (FILE 'HOME' ENTERED AT 10:38:30 ON 01 APR 2005)

     FILE 'HCA' ENTERED AT 10:38:41 ON 01 APR 2005
                E 20050054385/PN
                E US20050054385/PN
                E BINDRA AMRIT/AU
L1              9 S E3-E5
L2          11364 S RED(2A)PIGMENT?
L3              2 S L1 AND L2
                SEL L3 RN

     FILE 'REGISTRY' ENTERED AT 10:45:03 ON 01 APR 2005
L4             24 S E1-E24

     FILE 'LREGISTRY' ENTERED AT 10:51:23 ON 01 APR 2005

     FILE 'REGISTRY' ENTERED AT 11:04:50 ON 01 APR 2005
                E C20H14N2O7S2.CA/MF
L5              4 S C20H14N2O7S2.CA/MF
                E C20H14N2O7S2.CA/MF
L6             10 S E5-8
L7              1 S 83249-60-9/RN

     FILE 'HCA' ENTERED AT 11:15:00 ON 01 APR 2005
                E COMPOSITION/CT
                E COATING/CT
L8              0 S L7

     FILE 'REGISTRY' ENTERED AT 11:19:43 ON 01 APR 2005
L9              1 S 141025-34-5/RN
                E 73019-25-7/RN
L10             1 S 73019-25-7/RN
                E 67990-37-8/RN
L11             1 S 67990-37-8/RN

     FILE 'HCA' ENTERED AT 11:37:03 ON 01 APR 2005

     FILE 'CAOLD' ENTERED AT 11:37:17 ON 01 APR 2005
L12             0 S L7

     FILE 'HCAPLUS' ENTERED AT 11:38:18 ON 01 APR 2005
L13             0 S L7
L14             1 S L9
L15             0 S L10
L16             0 S L11

     FILE 'CAOLD' ENTERED AT 11:41:52 ON 01 APR 2005
L17             0 S L9-L11

     FILE 'REGISTRY' ENTERED AT 11:42:29 ON 01 APR 2005
                E C20H14N2O7S2.CA/MF
                E 410538-28-2/RN
L18             1 S 410538-28-2/RN
                E 250639-69-1/RN
L19             1 S 250639-69-1/RN
                E 139966-00-0/RN
L20             1 S 139966-00-0/RN
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                E 90333-45-2/RN
L21           1 S 90333-45-2/RN
                E 62681-89-4/RN
L22           1 S 62681-89-4/RN
                E 62681-88-3/RN
L23           1 S 62681-88-3/RN

     FILE 'HCAPLUS' ENTERED AT 11:54:29 ON 01 APR 2005
L24           0 S L18
L25           1 S L19
L26           0 S L20
L27           1 S L21
L28           1 S L22
L29           1 S L23

     FILE 'CAOLD' ENTERED AT 11:56:51 ON 01 APR 2005
L30           0 S L18-L23

     FILE 'REGISTRY' ENTERED AT 11:57:19 ON 01 APR 2005
L31           3 S L9-L11
L32           6 S L18-L23

     FILE 'HCAPLUS' ENTERED AT 11:59:32 ON 01 APR 2005
L33           4 S L14 OR L24-L29

     FILE 'REGISTRY' ENTERED AT 12:03:18 ON 01 APR 2005

=> d l7 all

L7   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2005 ACS on STN
RN   83249-60-9  REGISTRY
ED   Entered STN:  16 Nov 1984
CN   1-Naphthalenesulfonic acid, 2-[(2-hydroxy-6-sulfo-1-
     naphthalenyl)azo]-, calcium salt (1:1) (9CI)  (CA INDEX NAME)
MF   C20 H14 N2 O7 S2 . Ca
LC   STN Files:   CHEMLIST
     Other Sources:   DSL**, EINECS**, TSCA**
         (**Enter CHEMLIST File for up-to-date regulatory information)
CRN  (111797-52-5)

Ring System Data

Elemental|Elemental| Size of |Ring System|   Ring    |   RID
Analysis |Sequence |the Rings|  Formula  |Identifier|Occurrence
   EA    |   ES    |   SZ    |    RF     |   RID    |  Count
=========+=========+=========+===========+==========+==========
C6-C6    |C6-C6    |6-6      |C10        |591.49.57 |2
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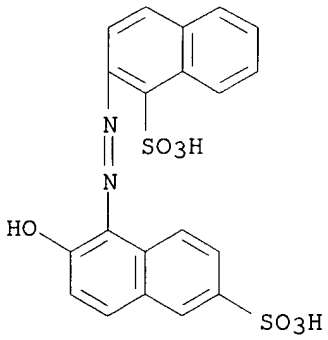


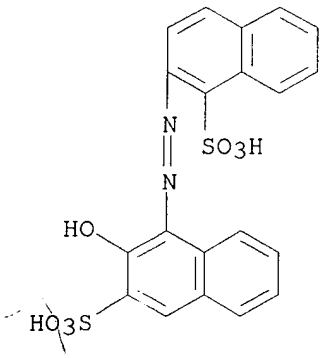
● Ca

=> d l31 1-3 all

L31 ANSWER 1 OF 3 REGISTRY COPYRIGHT 2005 ACS on STN
RN **141025-34-5** REGISTRY
ED Entered STN: 01 May 1992
CN 1-Naphthalenesulfonic acid, 2-[(2-hydroxy-3-sulfo-1-naphthalenyl)azo]-, calcium salt (1:1) (9CI) (CA INDEX NAME)
MF C20 H14 N2 O7 S2 . Ca
SR CA
LC STN Files: CA, CAPLUS
DT.CA CAplus document type: Patent
RL.P Roles from patents: USES (Uses)
CRN (787518-41-6)

Ring System Data

Elemental Analysis EA	Elemental Sequence ES	Size of the Rings SZ	Ring System Formula RF	Ring Identifier RID	RID Occurrence Count
C6-C6	C6-C6	6-6	C10	591.49.57	2



● Ca

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1

AN 116:257360 CA
TI Preparation of mixed laked azo pigments
IN Necas, Miroslav; Plechacek, Vaclav
PA Czech.
SO Czech., 4 pp.
CODEN: CZXXA9
DT Patent
LA Czech
IC ICM C09B065-00
CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI CS 268606	B1	19900314	CS 1988-6215	19880919
PRAI CS 1988-6215		19880919		

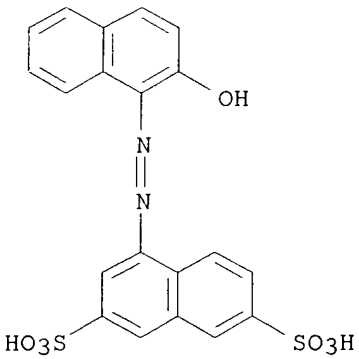
AB Red pigments for printing inks, varnishes, and plastics with brilliant modified shades are prepared by coupling a mixture containing 75-99.5% diazotized 2,4,5-H2N(R1)(R2)C6H2SO3H (R1, R2 = H, Cl, Me) and 0.5-25% diazotized 2,n-H2NC10H6SO3H (n = 1, 5, 6, 7, 8) with 3,2-HOC10H6CO2H (I) and laking the zo dye with Ca, Ba, Mg, Sr, or Mn. A mixture containing 96 mol% Ca salt of 2,4-HO3S MeC6H3NH2 → I (II) and 4 mol% Ca salt of 1,2-HO3SC10H6-NH2 → I was prepared in this way and had a more bluish shade than II.
ST azo pigment mixt lake
IT Pigments
(azo, laked, manufacture of mixed, with modified shade)
IT 81-16-3, 2-Naphthylamine-1-sulfonic acid 86-60-2, 2-Naphthylamine-8-sulfonic acid 88-44-8, 4-Aminotoluene-3-sulfonic acid 140921-46-6
RL: USES (Uses)
(coupling of diazotized, with hydroxynaphthoic acid)
IT 92-70-6, 3-Hydroxy-2-naphthoic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling of, with mixts. of diazotized aminobenzene- and

-naphthalenesulfonic acids)
IT 73612-29-0 141025-33-4 141025-34-5 141025-35-6 141025-36-7
141025-37-8
RL: USES (Uses)
(mixts. containing, manufacture of, as pigments)

L31 ANSWER 2 OF 3 REGISTRY COPYRIGHT 2005 ACS on STN
RN **73019-25-7** REGISTRY
ED Entered STN: 16 Nov 1984
CN 2,7-Naphthalenedisulfonic acid, 4-[(2-hydroxy-1-naphthalenyl)azo]-,
calcium salt (1:1) (9CI) (CA INDEX NAME)
MF C20 H14 N2 O7 S2 . Ca
LC STN Files: CHEMLIST
Other Sources: NDSL**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
CRN (90339-80-3)

Ring System Data

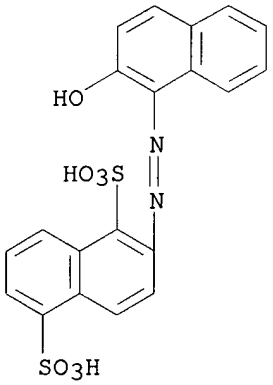
Elemental Analysis EA	Elemental Sequence ES	Size of the Rings SZ	Ring System Formula RF	Ring Identifier RID	RID Occurrence Count
C6-C6	C6-C6	6-6	C10	591.49.57	2



L31 ANSWER 3 OF 3 REGISTRY COPYRIGHT 2005 ACS on STN
RN **67990-37-8** REGISTRY
ED Entered STN: 16 Nov 1984
CN 1,5-Naphthalenedisulfonic acid, 2-[(2-hydroxy-1-naphthalenyl)azo]-,
calcium salt (1:1) (9CI) (CA INDEX NAME)
MF C20 H14 N2 O7 S2 . Ca
LC STN Files: CHEMLIST
Other Sources: EINECS**, NDSL**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
CRN (116680-42-3)

Ring System Data

Elemental Analysis EA	Elemental Sequence ES	Size of the Rings SZ	Ring System Formula RF	Ring Identifier RID	RID Occurrence Count
C6-C6	C6-C6	6-6	C10	591.49.57	2



● Ca

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=> d que stat l32
L18             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  410538-28-2/RN
L19             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  250639-69-1/RN
L20             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  139966-00-0/RN
L21             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  90333-45-2/RN
L22             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  62681-89-4/RN
L23             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  62681-88-3/RN
L32             6 SEA FILE=REGISTRY ABB=ON  PLU=ON  (L18 OR L19 OR L20 OR
                  L21 OR L22 OR L23)


=> d l32 1-6 all

L32  ANSWER 1 OF 6  REGISTRY  COPYRIGHT 2005 ACS on STN
RN   410538-28-2  REGISTRY
ED   Entered STN:  03 May 2002
CN   1,3-Naphthalenedisulfonic acid, 7-hydroxy-8-(1-naphthalenylazo)-,
     monosodium salt (9CI)  (CA INDEX NAME)
MF   C20 H14 N2 O7 S2 . Na
SR   Chemical Library
LC   STN Files:   CHEMCATS
CRN  (22915-90-8)

Ring System Data
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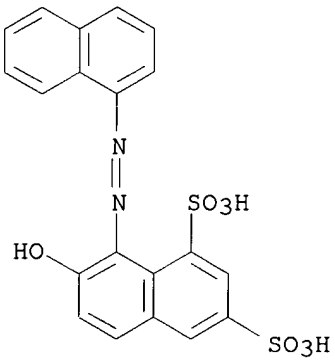
Elemental Analysis EA	Elemental Sequence ES	Size of the Rings SZ	Ring System Formula RF	Ring Identifier RID	RID Occurrence Count
C6-C6	C6-C6	6-6	C10	591.49.57	2

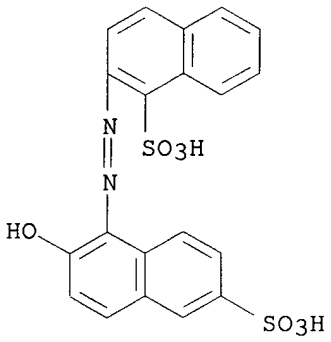


● Na

L32 ANSWER 2 OF 6 REGISTRY COPYRIGHT 2005 ACS on STN
RN **250639-69-1** REGISTRY
ED Entered STN: 13 Dec 1999
CN 1-Naphthalenesulfonic acid, 2-[(2-hydroxy-6-sulfo-1-naphthalenyl)azo]-, strontium salt (1:1) (9CI) (CA INDEX NAME)
MF C20 H14 N2 O7 S2 . Sr
SR CAS Client Services
LC STN Files: CA, CAPLUS, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: PREP (Preparation)
CRN (111797-52-5)

Ring System Data

Elemental Analysis EA	Elemental Sequence ES	Size of the Rings SZ	Ring System Formula RF	Ring Identifier RID	RID Occurrence Count
C6-C6	C6-C6	6-6	C10	591.49.57	2



● Sr

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1

AN 142:262349 CA
TI Heat stable laked monoazo red pigment and its manufacture
IN Bindra, Amrit P.
PA USA
SO U.S. Pat. Appl. Publ., 11 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM C09D011-00
ICS G03G009-00
NCL 106031800
CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 41, 42
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2005051050	A1	20050310	US 2003-657485	20030908
WO 2005026264	A1	20050324	WO 2004-US28950	20040903

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2003-657485 20030908
AB The title red pigment has a unique x-ray diffraction pattern. Use of certain surface active agents e.g. alkylamine-guanidine polyoxyethanol during the coupling reaction facilitates the subsequent formation of the laked monoazo red pigments in the β

crystal form with a distinct X-ray diffraction pattern. The X-ray diffraction pattern comprises high diffraction intensities at diffraction angles of .apprx.10.4°, .apprx.17.5°, .apprx.18.7°, .apprx. 21.6° and .apprx.23°; moderate diffraction intensities at .apprx.14.4°, .apprx.15°, .apprx.24.4°, .apprx.24.8°, .apprx.25.2° and .apprx.26.2°; and low diffraction intensities at .apprx.about 15.4°, .apprx.17.5°, .apprx.17.8°, .apprx.19.3°, .apprx.20°, .apprx.21°, .apprx.21.8°, .apprx.26.6°, .apprx.28.6°, .apprx.30.2°, .apprx.31.6 °, .apprx.32.1°, .apprx.34.8° and .apprx.38°. Also, the pH ranges described facilitate the formation of the laked monoazo red pigments in the β crystal form with a distinct X-ray diffraction pattern. Coating compns., ink compns., plastic compns., electrostatic toner compns., powder coating compns., paint compns., and paper compns. containing the red pigment have high chroma.

ST naphthalenesulfonic monoazo strontium salt pigment prepn

IT Amides, uses
RL: NUU (Other use, unclassified); USES (Uses)
(coco, N-[3-(dimethylamino)propyl], N-oxides; heat stable laked monoazo red pigment)

IT Amine oxides
RL: NUU (Other use, unclassified); USES (Uses)
(cocoalkyldimethyl; heat stable laked monoazo red pigment)

IT Azo dyes
Pigments, nonbiological
(heat stable laked monoazo red pigment)

IT Coating materials
Electrographic toners
Inks
Surfactants
Viscose
(heat stable laked monoazo red pigment for)

IT Polyamides, uses
Polycarbonates, uses
Polyesters, uses
Polyimides, uses
Polyurethanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(heat stable laked monoazo red pigment for)

IT 41489-81-0, Sodium 2-hydroxynaphthalene-6-sulfonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling component; heat stable laked monoazo red pigment)

IT 81-16-3, 2-Aminonaphthalene-1-sulfonic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(diazotization; heat stable laked monoazo red pigment)

IT 1643-20-5, Lauryl dimethylamine oxide 2571-88-2, Stearyldimethylamine oxide 3332-27-2, Myristyldimethylamine oxide 7128-91-8, Dimethylhexadecylamine oxide
RL: NUU (Other use, unclassified); USES (Uses)
(heat stable laked monoazo red pigment)

IT 9003-53-6, Polystyrene 25014-41-9, Polyacrylonitrile
RL: TEM (Technical or engineered material use); USES (Uses)
(heat stable laked monoazo red pigment for)

IT 9002-88-4, Polyethylene
RL: TEM (Technical or engineered material use); USES (Uses)
(pigmented test piece; heat stable laked monoazo red pigment for)

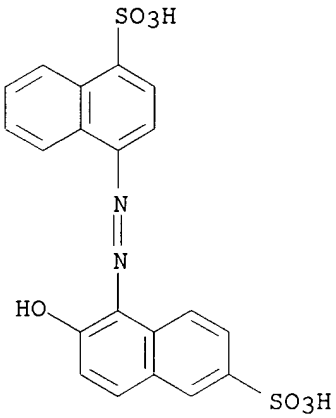
IT 250639-69-1P

RL: IMF (Industrial manufacture); PREP (Preparation)
(β crystal form; heat stable laked monoazo red pigment)

L32 ANSWER 3 OF 6 REGISTRY COPYRIGHT 2005 ACS on STN
RN **139966-00-0** REGISTRY
ED Entered STN: 27 Mar 1992
CN 1-Naphthalenesulfonic acid, 4-[(2-hydroxy-6-sulfo-1-naphthalenyl)azo]-, monosodium salt (9CI) (CA INDEX NAME)
MF C20 H14 N2 O7 S2 . Na
CI COM
SR CA
LC STN Files: BEILSTEIN*
(*File contains numerically searchable property data)
CRN (25317-26-4)

Ring System Data

Elemental Analysis EA	Elemental Sequence ES	Size of the Rings SZ	Ring System Formula RF	Ring Identifier RID	RID Occurrence Count
C6-C6	C6-C6	6-6	C10	591.49.57	2

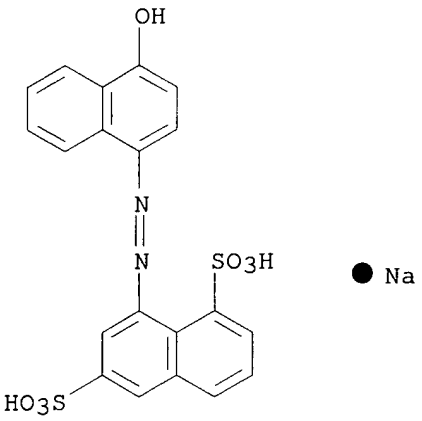


● Na

L32 ANSWER 4 OF 6 REGISTRY COPYRIGHT 2005 ACS on STN
RN **90333-45-2** REGISTRY
ED Entered STN: 16 Nov 1984
CN 1,6-Naphthalenedisulfonic acid, 8-[(4-hydroxy-1-naphthalenyl)azo]-, monopotassium monosodium salt (9CI) (CA INDEX NAME)
MF C20 H14 N2 O7 S2 . K . Na
LC STN Files: CA, CAPLUS
DT.CA CAplus document type: Patent
RL.P Roles from patents: USES (Uses)
CRN (687614-15-9)

Ring System Data

Elemental Analysis EA	Elemental Sequence ES	Size of the Rings SZ	Ring System Formula RF	Ring Identifier RID	RID Occurrence Count
C6-C6	C6-C6	6-6	C10	591.49.57	2



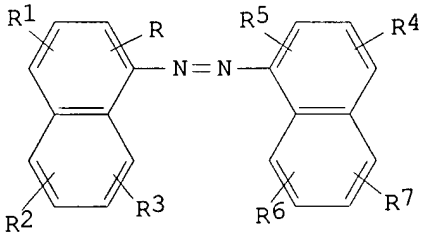
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1

AN 101:25140 CA
TI Recording solutions
PA Canon K. K., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC C09D011-00; C09D011-16
CC 42-12 (Coatings, Inks, and Related Products)
Section cross-reference(s): 41
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 58176260	A2	19831015	JP 1982-57985	19820409
PRAI	JP 1982-57985	19820409			

GI



I

AB The recording solns. contain compds. I [R, R1, R2, R3 = H, halogen, OH, NO2, Me, OMe, SO3R8; R4, R5, R6, R7 = H, OH, SO3R8; ≥1 substituent of R4-7 is OH; R8 = alkali metal, (substituted) ammonium, amine moiety] are claimed. The solns. for ink-jet recording containing I have excellent and well-balanced recording properties, storage stability, dissoln. stability in liquid solvents, and setting properties on printing paper, and give printed letters showing excellent weatherability, light resistance, water resistance, and alc. resistance. Thus, a SiO2 layer was laminated onto an alumina plate by sputtering; a HfB2 resistance-heating layer was laminated on the SiO2 layer to give a resistance-heating pattern by selective etching, where a SiO2 protective layer was laminated to give an elec. heat exchanger. A glass plate was connected with the exchanger so that its grooves agreed with the resistance-heating body to give a recording head. Sep., I (R6 = 8-OH; R7 - 6-SO3Na; R and R1-5 = H) [90333-47-4] 3, diethylene glycol 25, N-methyl-2-pyrrolidinone 20, and H2O 52 parts were mixed and dissolved to give a solution, which was used with the above recording head to five 150 h of continuous recording.

ST azo jet printing ink; hydroxyazonaphthalene jet printing ink; recording head jet printing ink

IT Recording apparatus
(heads, photo-alumina-hafnium boron-glass, for jet-printing inks)

IT Dyes, azo
(hydroxyazonaphthalenes, jet-printing inks containing, storage-stable, for continuous use)

IT Inks
(jet-printing, hydroxyazonaphthalene-based, storage-stable, for continuous use)

IT 2653-72-7 5851-03-6 5858-33-3 90333-33-8 90333-34-9
90333-35-0 90333-36-1 90333-37-2 90333-38-3 90333-39-4
90333-40-7 90333-41-8 90333-42-9 90333-43-0 90333-44-1
90333-45-2 90333-46-3 90333-47-4 90339-77-8 90339-81-4
RL: USES (Uses)
(inks, jet-printing, storage-stable, for continuous use)

IT 7631-86-9, uses and miscellaneous
RL: USES (Uses)
(laminates with aluminum and hafnium boride and glass, recording heads, for jet-printing inks)

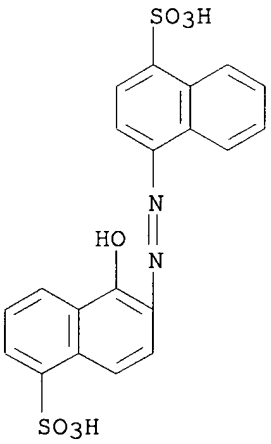
IT 12007-23-7
RL: USES (Uses)
(laminates with silica and alumina and glass, recording heads, for jet-printing inks)

IT 1344-28-1, uses and miscellaneous
RL: USES (Uses)
(laminates with silica and hafnium boride and glass, recording heads, for jet-printing inks)

L32 ANSWER 5 OF 6 REGISTRY COPYRIGHT 2005 ACS on STN
RN **62681-89-4** REGISTRY
ED Entered STN: 16 Nov 1984
CN 1-Naphthalenesulfonic acid, 5-hydroxy-6-[(4-sulfo-1-naphthalenyl)azo]-, monosodium salt, radical ion(1-) (9CI) (CA INDEX NAME)
MF C20 H14 N2 O7 S2 . Na
CI RIS
LC STN Files: CA, CAPLUS
DT.CA CAplus document type: Journal
RL.NP Roles from non-patents: RACT (Reactant or reagent)
CRN (763028-67-7)

Ring System Data

Elemental Analysis EA	Elemental Sequence ES	Size of the Rings SZ	Ring System Formula RF	Ring Identifier RID	RID Occurrence Count
C6-C6	C6-C6	6-6	C10	591.49.57	2



● Na

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1

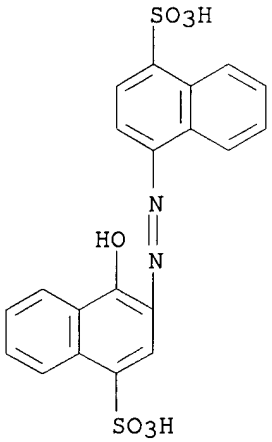
AN 86:170246 CA
TI ESR investigation of the radical intermediates formed in the photoreduction of azo dyes
AU Heijkoop, G.; Van Beek, H. C. A.
CS Lab. Chem. Technol., Univ. Technol., Delft, Neth.
SO Recueil des Travaux Chimiques des Pays-Bas (1977), 96(3), 83-5

CODEN: RTCPA3; ISSN: 0165-0513
DT Journal
LA English
CC 22-2 (Physical Organic Chemistry)
Section cross-reference(s): 40
AB ESR spectra of hydrazyl and aminonaphthoxy radicals formed upon photoredn. of azo dyes were measured. For the hydrazyl radicals the results obtained further confirm previous investigations of the mechanism of photoredn. of azo dyes. The direct identification in photoreduced dye solns. of aminonaphthoxy radicals, which are formed in the oxidation reduction equilibrium of aminonaphthols and iminoquinones provides strong evidence for previously proposed mechanisms for the disproportionation of hydrazyl radicals.
ST azo dye photoredn mechanism; ESR hydrazyl aminonaphthoxy
IT Radicals, preparation
RL: FORM (Formation, nonpreparative)
(formation of, in photoredn. of azo dyes, ESR of)
IT Electron spin resonance
(of aminonaphthoxy and hydrazyl radicals, from photoredn. of azo dyes)
IT Reduction, photochemical
(of azo dyes, ESR of radicals from)
IT Dyes, azo
(photoredn. of, ESR of radicals from)
IT 62681-71-4 62681-72-5 62681-73-6 62705-58-2
RL: PRP (Properties)
(ESR of)
IT 62681-88-3 62681-89-4 62681-90-7 62681-91-8 62681-92-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(photoredn. of, ESR of radicals from)

L32 ANSWER 6 OF 6 REGISTRY COPYRIGHT 2005 ACS on STN
RN **62681-88-3** REGISTRY
ED Entered STN: 16 Nov 1984
CN 1-Naphthalenesulfonic acid, 4-hydroxy-3-[(4-sulfo-1-naphthalenyl)azo]-, monosodium salt, radical ion(1-) (9CI) (CA INDEX NAME)
MF C20 H14 N2 O7 S2 . Na
CI RIS
LC STN Files: CA, CAPLUS
DT.CA CAplus document type: Journal
RL.NP Roles from non-patents: RACT (Reactant or reagent)
CRN (783249-96-7)

Ring System Data

Elemental Analysis EA	Elemental Sequence ES	Size of the Rings SZ	Ring System Formula RF	Ring Identifier RID	RID Occurrence Count
C6-C6	C6-C6	6-6	C10	591.49.57	2



● Na

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1

AN 86:170246 CA
TI ESR investigation of the radical intermediates formed in the photoreduction of azo dyes
AU Heijkoop, G.; Van Beek, H. C. A.
CS Lab. Chem. Technol., Univ. Technol., Delft, Neth.
SO Recueil des Travaux Chimiques des Pays-Bas (1977), 96(3), 83-5
CODEN: RTCPA3; ISSN: 0165-0513
DT Journal
LA English
CC 22-2 (Physical Organic Chemistry)
Section cross-reference(s): 40
AB ESR spectra of hydrazyl and aminonaphthoxy radicals formed upon photoredn. of azo dyes were measured. For the hydrazyl radicals the results obtained further confirm previous investigations of the mechanism of photoredn. of azo dyes. The direct identification in photoreduced dye solns. of aminonaphthoxy radicals, which are formed in the oxidation reduction equilibrium of aminonaphthols and iminoquinones provides strong evidence for previously proposed mechanisms for the disproportionation of hydrazyl radicals.
ST azo dye photoredn mechanism; ESR hydrazyl aminonaphthoxy
IT Radicals, preparation
RL: FORM (Formation, nonpreparative)
(formation of, in photoredn. of azo dyes, ESR of)
IT Electron spin resonance
(of aminonaphthoxy and hydrazyl radicals, from photoredn. of azo dyes)
IT Reduction, photochemical
(of azo dyes, ESR of radicals from)
IT Dyes, azo
(photoredn. of, ESR of radicals from)
IT 62681-71-4 62681-72-5 62681-73-6 62705-58-2

RL: PRP (Properties)
(ESR of)
IT 62681-88-3 62681-89-4 62681-90-7 62681-91-8 62681-92-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(photoredn. of, ESR of radicals from)

=> => d que stat l33
L9 1 SEA FILE=REGISTRY ABB=ON PLU=ON 141025-34-5/RN
L14 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L9
L18 1 SEA FILE=REGISTRY ABB=ON PLU=ON 410538-28-2/RN
L19 1 SEA FILE=REGISTRY ABB=ON PLU=ON 250639-69-1/RN
L20 1 SEA FILE=REGISTRY ABB=ON PLU=ON 139966-00-0/RN
L21 1 SEA FILE=REGISTRY ABB=ON PLU=ON 90333-45-2/RN
L22 1 SEA FILE=REGISTRY ABB=ON PLU=ON 62681-89-4/RN
L23 1 SEA FILE=REGISTRY ABB=ON PLU=ON 62681-88-3/RN
L24 0 SEA FILE=HCAPLUS ABB=ON PLU=ON L18
L25 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L19
L26 0 SEA FILE=HCAPLUS ABB=ON PLU=ON L20
L27 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L21
L28 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L22
L29 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L23
L33 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L14 OR (L24 OR L25 OR L26 OR L27 OR L28 OR L29)

=> d l33 1-4 ibib abs hitstr hitind

L33 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:219481 HCAPLUS
DOCUMENT NUMBER: 142:262349
TITLE: Heat stable laked monoazo red pigment and its manufacture
INVENTOR(S): Bindra, Amrit P.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 11 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005051050	A1	20050310	US 2003-657485	20030908
WO 2005026264	A1	20050324	WO 2004-US28950	20040903

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,

AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

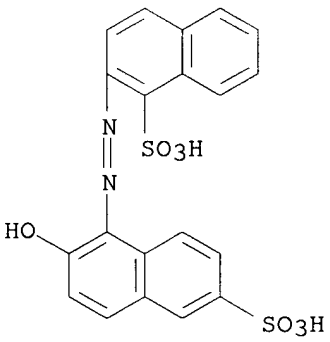
PRIORITY APPLN. INFO.: US 2003-657485 A 200309 08

AB The title red pigment has a unique x-ray diffraction pattern. Use of certain surface active agents e.g. alkylamine-guanidine polyoxyethanol during the coupling reaction facilitates the subsequent formation of the laked monoazo red pigments in the β crystal form with a distinct X-ray diffraction pattern. The X-ray diffraction pattern comprises high diffraction intensities at diffraction angles of .apprx.10.4°, .apprx.17.5°, .apprx.18.7°, .apprx. 21.6° and .apprx.23°; moderate diffraction intensities at .apprx.14.4°, .apprx.15°, .apprx.24.4°, .apprx.24.8°, .apprx.25.2° and .apprx.26.2°; and low diffraction intensities at .apprx.about 15.4°, .apprx.17.5°, .apprx.17.8°, .apprx.19.3°, .apprx.20°, .apprx.21°, .apprx.21.8°, .apprx.26.6°, .apprx.28.6°, .apprx.30.2°, .apprx.31.6 °, .apprx.32.1°, .apprx.34.8° and .apprx.38°. Also, the pH ranges described facilitate the formation of the laked monoazo red pigments in the β crystal form with a distinct X-ray diffraction pattern. Coating compns., ink compns., plastic compns., electrostatic toner compns., powder coating compns., paint compns., and paper compns. containing the red pigment have high chroma.

IT **250639-69-1P**
RL: IMF (Industrial manufacture); PREP (Preparation)
(β crystal form; heat stable laked monoazo red pigment)

RN 250639-69-1 HCAPLUS

CN 1-Naphthalenesulfonic acid, 2-[(2-hydroxy-6-sulfo-1-naphthalenyl)azo]-, strontium salt (1:1) (9CI) (CA INDEX NAME)



● Sr

IC ICM C09D011-00
ICS G03G009-00

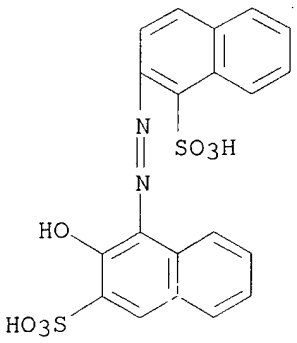
NCL 106031800; 106494000; 106402000; 106496000; 534581000; 534602000; 534883000; 524190000; 430108230

CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 41, 42
IT **250639-69-1P**
RL: IMF (Industrial manufacture); PREP (Preparation)
(β crystal form; heat stable laked monoazo red pigment)

L33 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1992:257360 HCAPLUS
DOCUMENT NUMBER: 116:257360
TITLE: Preparation of mixed laked azo pigments
INVENTOR(S): Necas, Miroslav; Plechacek, Vaclav
PATENT ASSIGNEE(S): Czech.
SOURCE: Czech., 4 pp.
CODEN: CZXXA9
DOCUMENT TYPE: Patent
LANGUAGE: Czech
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CS 268606	B1	19900314	CS 1988-6215	198809 19
PRIORITY APPLN. INFO.:			CS 1988-6215	198809 19

OTHER SOURCE(S): MARPAT 116:257360
AB Red pigments for printing inks, varnishes, and plastics with brilliant modified shades are prepared by coupling a mixture containing 75-99.5% diazotized 2,4,5-H2N(R1)(R2)C6H2SO3H (R1, R2 = H, Cl, Me) and 0.5-25% diazotized 2,n-H2NC10H6SO3H (n = 1, 5, 6, 7, 8) with 3,2-HOC10H6CO2H (I) and laking the zo dye with Ca, Ba, Mg, Sr, or Mn. A mixture containing 96 mol% Ca salt of 2,4-HO3S MeC6H3NH2 → I (II) and 4 mol% Ca salt of 1,2-HO3SC10H6-NH2 → I was prepared in this way and had a more bluish shade than II.
IT **141025-34-5**
RL: USES (Uses)
(mixts. containing, manufacture of, as pigments)
RN 141025-34-5 HCAPLUS
CN 1-Naphthalenesulfonic acid, 2-[(2-hydroxy-3-sulfo-1-naphthalenyl)azo]-, calcium salt (1:1) (9CI) (CA INDEX NAME)



● Ca

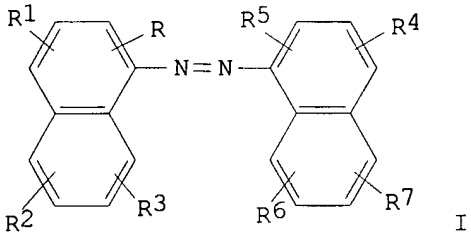
IC ICM C09B065-00
CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
IT 73612-29-0 141025-33-4 **141025-34-5** 141025-35-6
141025-36-7 141025-37-8
RL: USES (Uses)
(mixts. containing, manufacture of, as pigments)

L33 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1984:425140 HCAPLUS
DOCUMENT NUMBER: 101:25140
TITLE: Recording solutions
PATENT ASSIGNEE(S): Canon K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 58176260	A2	19831015	JP 1982-57985	19820409

PRIORITY APPLN. INFO.: JP 1982-57985 19820409

GI



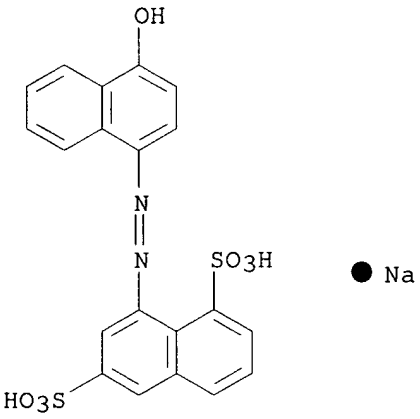
I

AB The recording solns. contain compds. I [R, R1, R2, R3 = H, halogen, OH, NO2, Me, OMe, SO3R8; R4, R5, R6, R7 = H, OH, SO3R8; ≥1 substituent of R4-7 is OH; R8 = alkali metal, (substituted) ammonium, amine moiety] are claimed. The solns. for ink-jet recording containing I have excellent and well-balanced recording properties, storage stability, dissoln. stability in liquid solvents, and setting properties on printing paper, and give printed letters showing excellent weatherability, light resistance, water resistance, and alc. resistance. Thus, a SiO2 layer was laminated onto an alumina plate by sputtering; a HfB2 resistance-heating layer was laminated on the SiO2 layer to give a resistance-heating pattern by selective etching, where a SiO2 protective layer was laminated to give an elec. heat exchanger. A glass plate was connected with the exchanger so that its grooves agreed with the resistance-heating body to give a recording head. Sep., I (R6 = 8-OH; R7 - 6-SO3Na; R and R1-5 = H) [90333-47-4] 3, diethylene glycol 25, N-methyl-2-pyrrolidinone 20, and H2O 52 parts were mixed and dissolved to give a solution, which was used with the above recording head to five 150 h of continuous recording.

IT **90333-45-2**
RL: USES (Uses)
(inks, jet-printing, storage-stable, for continuous use)

RN 90333-45-2 HCAPLUS

CN 1,6-Naphthalenedisulfonic acid, 8-[(4-hydroxy-1-naphthalenyl)azo]-, monopotassium monosodium salt (9CI) (CA INDEX NAME)

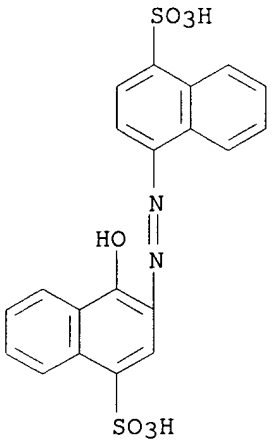


● Na

● K

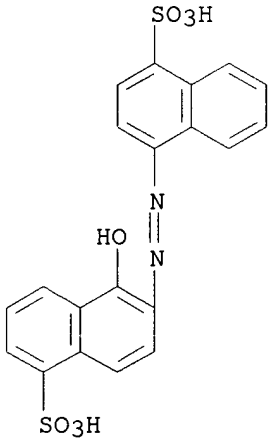
IC C09D011-00; C09D011-16
CC 42-12 (Coatings, Inks, and Related Products)
Section cross-reference(s): 41
IT 2653-72-7 5851-03-6 5858-33-3 90333-33-8 90333-34-9
90333-35-0 90333-36-1 90333-37-2 90333-38-3 90333-39-4
90333-40-7 90333-41-8 90333-42-9 90333-43-0 90333-44-1
90333-45-2 90333-46-3 90333-47-4 90339-77-8
90339-81-4
RL: USES (Uses)
(inks, jet-printing, storage-stable, for continuous use)

L33 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1977:170246 HCAPLUS
DOCUMENT NUMBER: 86:170246
TITLE: ESR investigation of the radical intermediates formed in the photoreduction of azo dyes
AUTHOR(S): Heijkoop, G.; Van Beek, H. C. A.
CORPORATE SOURCE: Lab. Chem. Technol., Univ. Technol., Delft, Neth.
SOURCE: Recueil des Travaux Chimiques des Pays-Bas (1977), 96(3), 83-5
CODEN: RTCPA3; ISSN: 0165-0513
DOCUMENT TYPE: Journal
LANGUAGE: English
AB ESR spectra of hydrazyl and aminonaphthoxy radicals formed upon photoredn. of azo dyes were measured. For the hydrazyl radicals the results obtained further confirm previous investigations of the mechanism of photoredn. of azo dyes. The direct identification in photoreduced dye solns. of aminonaphthoxy radicals, which are formed in the oxidation reduction equilibrium of aminonaphthols and iminoquinones provides strong evidence for previously proposed mechanisms for the disproportionation of hydrazyl radicals.
IT **62681-88-3 62681-89-4**
RL: RCT (Reactant); RACT (Reactant or reagent)
(photoredn. of, ESR of radicals from)
RN 62681-88-3 HCAPLUS
CN 1-Naphthalenesulfonic acid, 4-hydroxy-3-[(4-sulfo-1-naphthalenyl)azo]-, monosodium salt, radical ion(1-) (9CI) (CA INDEX NAME)



● Na

RN 62681-89-4 HCAPLUS
CN 1-Naphthalenesulfonic acid, 5-hydroxy-6-[(4-sulfo-1-naphthalenyl)azo]-, monosodium salt, radical ion(1-) (9CI) (CA INDEX NAME)



● Na

CC 22-2 (Physical Organic Chemistry)
Section cross-reference(s): 40
IT **62681-88-3 62681-89-4** 62681-90-7 62681-91-8 62681-92-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(photoredn. of, ESR of radicals from)